THE RADAR POST

NWS GOODLAND'S NEWSLETTER SINCE 2017

2017 SPRING ISSUE

Volume 1, Issue 1

Spring...A Busy Time of Year for NWS

A Message from our Meteorologist-In-Charge

Spring is an exciting time here on the High Plains. The weather is seldom tranquil, and extremes of temperature, wind, and precipitation are common. Actually, that makes it one of my favorite times of year. Certainly we haven't seen the last of the snow and cold for the season, but severe weather is right around the corner, and the National Weather Service office in Goodland has already begun preparations for the up-coming severe weather season.

INSIDE THIS ISSUE

If you check out our web page (www.weather.gov/gld) or the schedule in this issue, you'll find a list of storm spotter training classes for the Tri-State area. We will visit all 19 counties we serve and present spotter classes on weekday evenings. If you haven't attended a class in the past, try to make it to one near you in 2017. It is free and open to people of all ages. Also on our web page is a Severe Weather Awareness Safety Packet that you can download and share. Later this month, our staff will undergo annual refresher training on severe storms and the radar

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signatures associated with severe weather. The mission of the National Weather Service is the protection of life and property through the issuance of forecasts, advisories and warnings.

This severe weather season we will be utilizing satellite imagery from the new GOES-16 weather satellite launched last November. GOES stands for Geostationary Operational Environmental Satellite, it's the satellite imagery you see on the Internet and TV weather broadcasts. The exciting difference we are looking forward to in 2017 is the ability of this satellite to see smaller features in more detail, sample the atmosphere using many new sensors, and to send images back to earth more frequently. During severe weather outbreaks we will now have the potential to see a new image every minute, compared to the current 5-15 minutes!

Our office continues to work closely with our partners in public safety by attending county and state emergency planning meetings, presenting weather safety information, participating in training exercises and testing communications equipment. By keeping informed of rapidly changing weather conditions this spring and summer and knowing how to respond if severe weather threatens, you can help us build a Weather Ready Nation.

David Floyd

-Meteorologist-In-Charge

Homeschoolers Come To Visit!

On January 6th, our office had the pleasure of hosting a group of homeschooled students for a tour and an educational presentation led by one of our general forecasters, Jesse Lundquist. While the students live in different communities throughout Northwest Kansas, they come together periodically to participate in various activities as a group. The ages ranged from preschool to junior high.

Meteorologist Jesse Lundquist with students

During the presentation, a wide variety of topics were covered. Students were shown how a weather balloon is released and what type of data is gathered as it travels through the atmosphere and how that helps us formulate forecasts. Through the issuance of pretend warnings, students were shown how the radar beam works and how we use that information to process real warnings. The group was also able to learn about how tornadoes and lightning form through “hands on” exercises using a tornado machine and Van de Graaf Electrostatic Generator. Lastly, the group was given a tour of our operations floor and shown how the workstations are situated.

We thoroughly enjoyed having this group visit us. If you or anyone you know has a group of students or weather enthusiasts that you feel would enjoy this type of event, please contact us using the information at the end of this newsletter.

NCEM Meeting and Tour of Washington-Yuma Communications Center

Matthew Branch talks at NCEM

On January 10th, Northeast Colorado Emergency Management (NCEM) held their first monthly meeting of the year at the Akron Fairgrounds in Akron, CO. Representing our office at the meeting were Ryan Husted (WCM), Tim Lynch (Meteorologist), and Scott Elmore (Meteorologist). These meetings are designed to bring partners throughout the Colorado Emergency Management spectrum together to give updates on their counties or field of expertise. The highlight of the meeting was a presentation given by Matthew Branch, a Fire Management Officer for the Northeast Region of the Colorado Division of Fire Prevention and Control, regarding the Chimney Top 2 Fire in Tennessee which was a part of the wildfires that did damage in Gatlinburg and Pigeon Forge. Being a member of a responding ICT Fire Team, Branch discussed the lessons learned from communication issues and the lack of practice emergency activation.

WCM Ryan Husted and EM Roger Brown at WY Comms

After the meeting, Roger Brown, the emergency manager of Yuma County, CO, gave our office delegation a tour of the Washington-Yuma Communications Dispatch Center. With state of the art equipment and two licensed GRLevel3 applications, the Dispatch Center is an impressive display of communication prowess and should continue to serve their counties' emergency needs well. A big thanks to Roger Brown for the hospitality and the informative tour of his EOC!

Meteorology Course at Northwest Tech

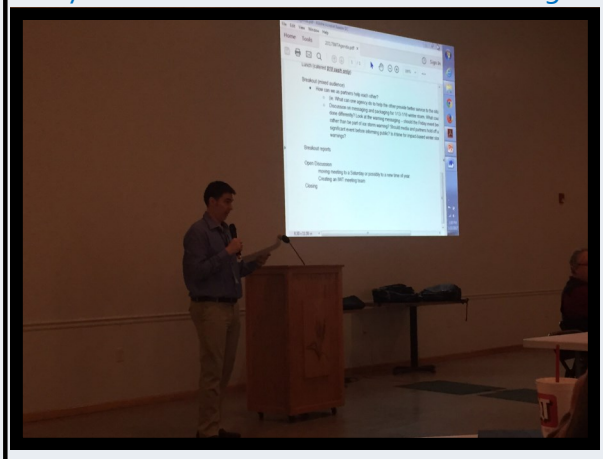
For this spring semester, our office provided instruction for a six week meteorology course at Northwest Kansas Technical College in Goodland, KS. Running from January through February, this course provided an introduction to atmospheric phenomena and weather. It was designed to provide comprehensive knowledge of the earth's atmosphere and its changing behavior as it relates to human activities and how it influences our daily lives. Topics for the course included solar radiation, global circulation, environmental issues, winds, cloud formation, stability, precipitation processes, weather systems, and severe weather. Basic physical principles and processes were taught to aid students in understanding weather, global environmental change, and other environmental disciplines. Upon completion of the course, students received three hours of course credit. Staff participating in the instruction of the course were Dave Floyd (MIC), Brian Warren (OPL), and meteorologists Jesse Lundquist, Tim Lynch, and Jason Neilson.

NW Tech students attending class at the NWS

Kansas IWT

The annual Kansas Integrated Weather Team Conference was held on January 23rd in Lyons, KS at the Celebration Centre. The conference is designed to bring together people from the weather enterprise and governmental agencies to discuss how they can communicate more efficiently to help serve the needs of the public better. This year's attendees included representatives from all of the National Weather Service offices that serve Kansas, emergency managers, Kansas Department of Transportation, Kansas Highway Patrol, and many members of the media, including Jay Prater from KAKE in Wichita, KS. Representing NWS Goodland were Dave Floyd (MIC), Jeremy Martin (SOO), Ryan Husted (WCM), and meteorologists Jessica Hill and Scott Elmore.

Ryan Husted talks about flash flooding



Topics that were discussed included the recent January Ice Storm, the upcoming 2017 Severe Weather Awareness Week, and Impact Based Decision Support Services. NWS Goodland's own Ryan Husted led a presentation and discussion on flash flooding and how communicating the dangers to the public could be improved and how Flash Flood Watches, if used properly, could be beneficial in giving lead time to the public of approaching dangers. For the last hour of the conference, participants were split into 4 small discussion groups where they could discuss any topic they felt was an area of concern and ways to improve upon it. At the end, all attendees reconvened in the main meeting hall to hear what was discovered in the small group sessions before adjourning for the day.

GOES 16 Begins Operational Test This Spring

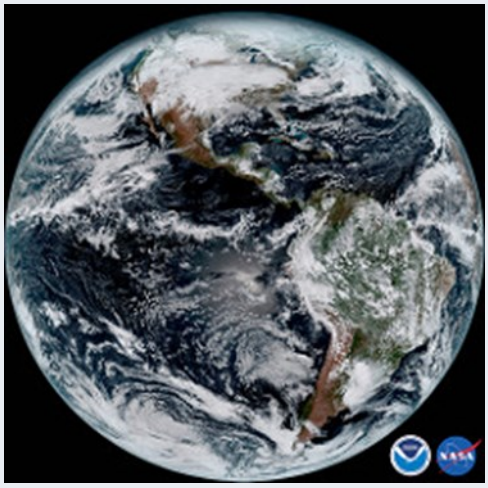


Figure 1—First image released by GOES-16

Next Generation of Operational Satellites to Begin

Jeremy Martin

Science and Operations Officer

After a successful launch in November the Advanced Baseline Imager (ABI) on the satellite GOES-16 will begin to send data to the world this spring. This satellite is a remarkable upgrade in technology from the current GOES series of satellites and will provide a wealth of new data to improve forecasts of high impact weather across North and South America. This new satellite will increase the amount of observed channels from 5 to 16. This increase in observed channels will aid in the detection of smoke, dust, fires and severe thunderstorms. GOES 16 resolution will increase by a factor of 4, creating a much

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clearer picture and will allow scientists to detect small scale features that were previously undetected. Finally GOES-16 will scan the atmosphere 5 times faster than previous satellites allowing more details of the atmosphere's evolution to be detected. Current satellites can scan the continental United States (CONUS) every 15 minutes under normal operations and in special circumstances scan smaller areas every 5 minutes. GOES-16 will scan the CONUS every 5 minutes in normal operations and can scan smaller areas every 30 seconds at times.

One immediate benefit for the tri-state area of the faster scan times and higher resolution will allow for the early detection of wildfires across the Tri State area. In Figure 2 below 3 potential fires are apparent on the left from GOES-16 scanning every 30 seconds. On the right was the latest scan available from the current GOES satellite. With the increased resolution, these fires are better detected and provide better clues about fire intensity.

Figure 2—Fires detected over Florida GOES-16 (right), GOES-East (left)

Storm Spotter Classes For March 2017

Monday	Tuesday	Wednesday	Thursday	Friday
****Talks last for 2 hours and begin at 6:30PM local time****	**28 Thomas Co.** Colby, KS Community Bldg. Downstairs- 285 E 5th Street	**1 Decatur Co.** Oberlin, KS Gateway Civic Center- 1 Morgan Drive	**2 Cheyenne (KS)** St. Francis, KS St. Francis High School - 100 S College St.	**3 Gove County** Grainfield, KS Gove County 4-H Building- 757 W 3rd
6	**7 Graham Co.** Hill City, KS Frontier Stage- 321 Main Street	**8 Logan County** Oakley, KS Logan County Courthouse- 710 W 2nd Street	**9 Norton Co.** Norton, KS Prairie Land Electric Cooperative- 14935 US Hwy 36	**10**
13 Greeley Co. Tribune, KS Tribune Fire Department	**14 Yuma Co.** Wray, CO Wray Fire Hall- 145 Main Street	**15 Hitchcock Co** Culbertson, NE Culbertson Fire House- 311 Taylor Street	**16 Rawlins Co.** Atwood, KS Prairie Development Center- 208 S 4th Street	**17**
20 Kit Carson Burlington, CO Burlington Ambulance Building- 1576 Lowell Avenue	**21 Sheridan Co.** Hoxie, KS Bowen Scott House- 1041 Sheridan Avenue	**22 Dundy Co.** Benkelman, NE EMS Building- 1305 A St.	**23 Wichita Co.** Leoti, KS At the Fire House- 301 N 4th Street	**24 Wallace Co.** Sharon Springs, KS Wallace County Fairgrounds- CAB Building
27	**28 Sherman Co** Goodland, KS Wolak (Fire/EMS Station) Building- 1006 Center St.	**29 Red Willow** McCook, NE Heritage Senior Center- 1312 W 5th Street	**30 Cheyenne(CO)** Cheyenne Wells, CO Fairgrounds Community Bldg- 425 South 7th Street	**31**

Weather Ready Nation

Ryan Husted

Warning Coordination Meteorologist

Weather is a life-threatening hazard that affects the nation every day. Due to this danger, our communities must come together and spread the word about imminent inclement weather. By working as a team, lives and property will be saved across not only our small sliver of the High Plains but across the entire nation. How is this accomplished? By building a Weather-Ready Nation!

Weather-Ready Nation is an exciting initiative that the National Weather Service continues to work towards. In fact, it is an integral part of the agency's future! The focus of a Weather-Ready Nation is to make sure our families, neighbors, coworkers, friends and communities are prepared for disasters and act on warnings when they are is-

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sued. Through building relationships with our partners and communities, the National Weather Service hopes that your voices will serve as force multipliers to protect those we care most about, our friends and loved ones.

Recent national weather events stress the importance of this mission, particularly the January ice storm in Kansas and the January 20-21, 2017 tornado outbreak in the southeastern United States. Because of our teamwork in January, many ice-related impacts were mitigated due to travelers avoiding the roads and all of us remaining inside during dangerous conditions. This is the essence of a Weather-Ready Nation!

Another case to consider is a large tornado bearing down on your town at 3 am. Will you get that early morning warning, but most importantly, will you act upon that warning immediately? This very case recently occurred in Hattiesburg, MS where four people tragically lost their lives on January 20th. Mixed messages from various weather and emergency information sources you follow may lead you to not act quickly due to confusion. However, if all of us work together to provide a consistent message, our loved ones will heed our warning, acting proactively instead of at the last second or not at all.

If your business or place of work, your child's school, your local hospital or nursing home, or other places you frequent are interested in building a Weather Ready Nation, see this website for more information (http://www.nws.noaa.gov/com/weatherreadynation/). To become a Weather Ready Nation Ambassador, contact Ryan Husted, Warning Coordination Meteorologist, at 785-899-2360 to sign up!

Photo Contest

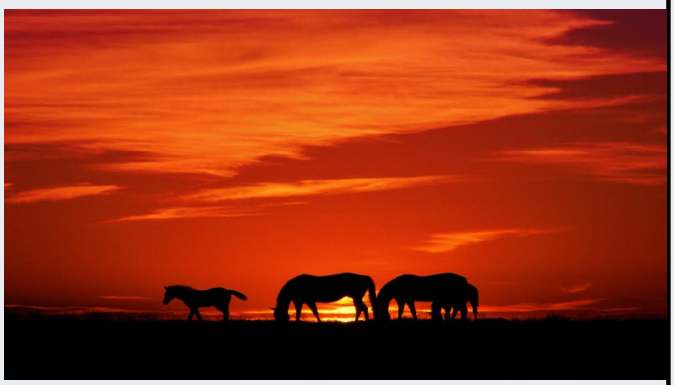
Our office held a photo contest earlier this year, with the winners of our five categories receiving a CoCoRaHS rain gauge. Some of the photos we received will be incorporated into our educational presentations and shown during our storm spotter talks. Congrats to all of the winners!

Adriana Evans– Flooding

Kegan Nothdurft-Severe Weather

Patrick Weber-Observing Weather

Rita Stephens-Cloud Formations



Timothy McHenry-Sunrise/Sunset

A Message from the Missouri Basin River Forecast Center (MBRFC)

Editor's Note: This article originally appeared in *The Water Log*, the MBRFC's newsletter. While it was written specifically for NWS Offices, the information contained in it is pertinent for anyone interested in keeping close tabs on a specific river and was therefore, passed along in our newsletter.

Let's face it, social media has become a large part of what we do at the NWS. More and more people turn to social media platforms like Facebook and Twitter to get their information. So why wouldn't river information be available as well? The MBRFC is doing just that, sending out river and flood information across both Twitter and Facebook.

We are doing this by first making social media a priority in the office. From making routine posts to checking for comments. In addition, we have developed a script to post our river forecasts, specifically to Twitter. Here's what you need to know:

The Forecaster-On-Duty must now make a social media post at least 4 times a week. This post can be about anything hydrology or weather related. During times of flooding, posts should generally focus on those areas and impacts. However, during quiet weather, most weather related items are fair game. Our goal is to be more focused on our customers, the WFO. During busy times, like during severe weather events, hydrology falls down the list. So we want to help you pick up the slack. As we make our posts, when the content falls on your specific coverage area, we will notify you likely via NWS Chat so you can quickly share/retweet to your followers.

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The main mission of our job at the MBRFC, is river forecasting. And now we finally have a way to quickly publish our flood forecasts, at least to Twitter. Our flood forecasts are sent via a script to Twitter. The script looks for criteria forecasts above forecast issuance stage. Using both observed values and the forecast, a set of rules guide the script to generate text for the tweet. From the observed values and forecast, it can determine if the river is expected to rise or fall. It can also determine at what category the river will reach (ex: above minor, major, etc). All of this is ingested in the text part of the tweet.

Once compiled, a tweet is generated that contains the forecast text, 5 character ID of the location and a link to the AHPS page for that location. The script then "sleeps" for 30 minutes, giving enough time for collaboration among WFO and RFC, before posting to Twitter.

Here is an example of the forecast tweets. You can see each tweet will list the appropriate river location followed by the forecast stage and if necessary crest information. The 5 character ID is listed as a Hashtag on the tweet followed by the link to the AHPS page. Although the link drops off for each tweet, it will still take you to the appropriate location. We included the link, rather than an image, to always keep the latest and greatest forecast out there, even if the text gets outdated.

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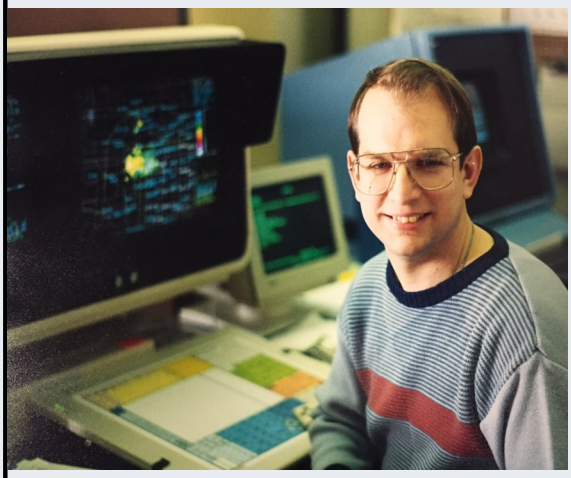
5 Character ID Hashtag: Using the 5 character ID as the hashtag for the tweet opens up a world of searching possibilities for the end user. For folks who are only concerned with one river location or even a small handful of locations, rather than following an entire office Twitter account (whether it be MBRFCs or individual WFO Twitter accounts), the user can search for each hashtag of interest.

We have set up a website devoted to explaining the 5 character ID Hashtag, located here: http://www.weather.gov/mbrfc/twitter_main. This main page lists a table for each of the WFO river forecast twitter pages. On each WFO page, users can find their specific river of interest, the associated hashtag, and a link to the AHPS page. Also included on these pages are instructions to set up search streams on both Hootsuite and Twitter, as well as, enabling mobile notifications on a Hootsuite mobile app.

OFFICE INFORMATION

The MBRFC is located in Pleasant Hill, Missouri, which is just southeast of Kansas City. The office is co-located with the Weather Forecast Office at Pleasant Hill. They were formerly located in the federal building in downtown Kansas City, and moved to their current location in 1991. The Weather Forecast Office moved into the building in 1993 from its former location at Kansas City International Airport.



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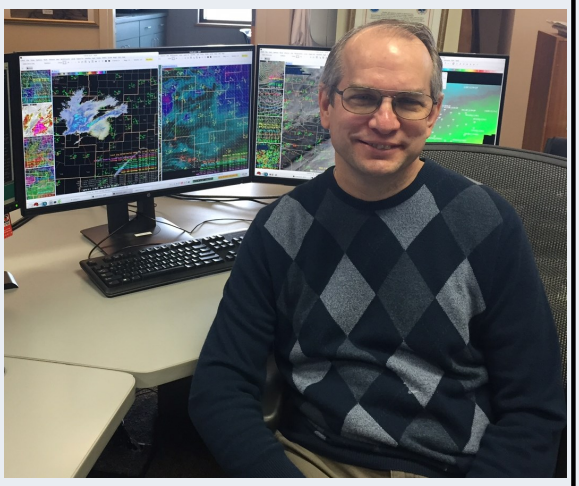

Present Day

Meet A Met

Each newsletter, we will feature a different employee here at NWS Goodland. This issue features Mark Buller. Being our most senior forecaster, Mark brings a wealth of knowledge and stability to the office. His experience and leadership on the operations floor is a huge asset during difficult forecasts and active weather. In addition to being a Senior Forecaster, Mark is also our Hydrology Focal Point. The following is a brief interview with him.

Q: **Where are you from originally?**

A: *I was born in Tribune, KS. Lived in Western Kansas for several years. Then lived the rest of my high school years up in Nebraska.*

Q: **Where did you go to college?**

A: *I completed my four year degree at the University of Northern Colorado in Greeley.*

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Q: **How long have you worked at the NWS?**

A: *29 years*

Q: **What types of things do you like to do in your spare time?**

A: *Not much, I read. I like sports. Walking. I do a lot of stuff at our church.*

Q: **What would your "perfect weather" day be like?**

A: *Something like today (*It was 75, clear*)*

Q: **What's the scariest weather situation you've ever been through?**

A: *While I was in the office and the office got hit by a 96 mph gust and the building shook. It kind of scared me. It was also my first severe weather event as a forecaster too.*

Q: **Do you have any heroes or people that inspire you?**

A: *I would say on a personal level would be my Grandpa Buller and a friend in the Weather Service Lyle Barker that is very influential and inspirational to me.*

Q: **Favorite band or singer?**

A: *My favorite band is Chicago.*

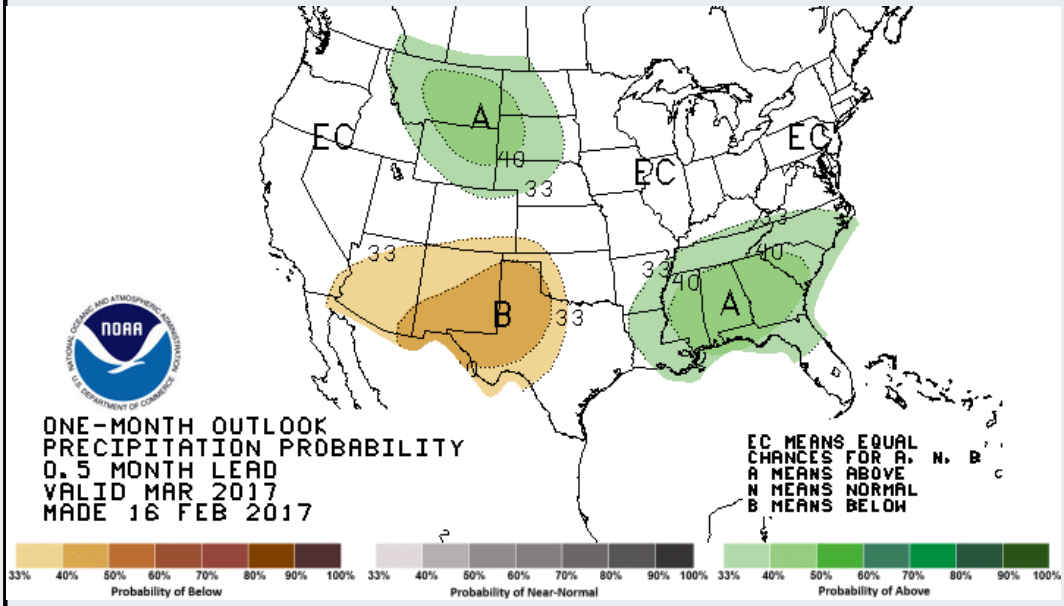
Q: **Favorite book or author?**

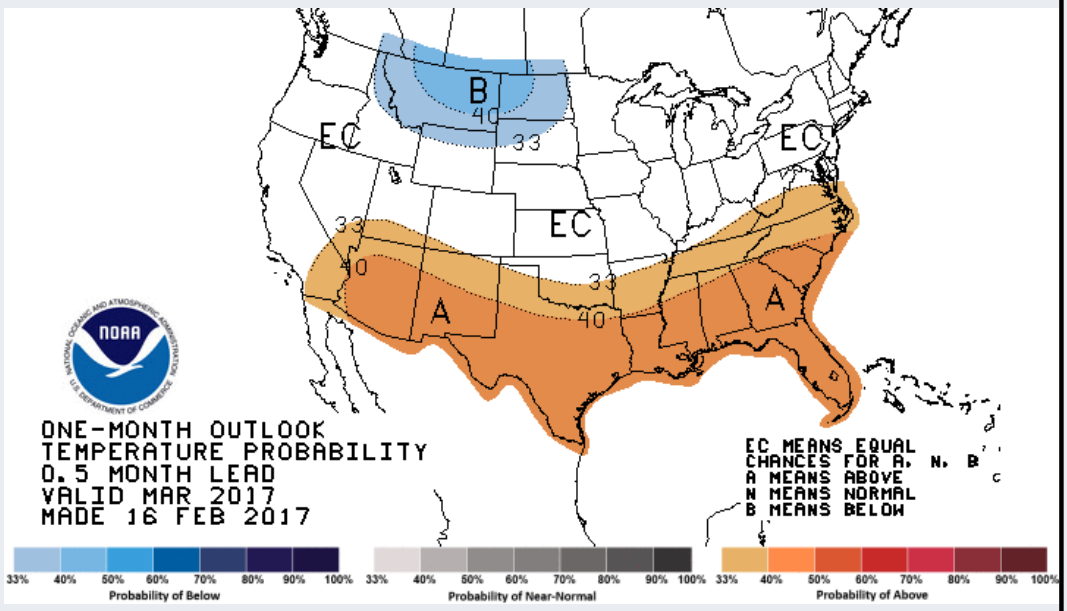
A: *I would say C. S. Lewis.*

Q: **If you could visit anywhere in the world, where would it be?**

A: *Jerusalem*

Climate Corner





One Month Summary

Our area has equal chances of seeing above or below average temperatures and precipitation.

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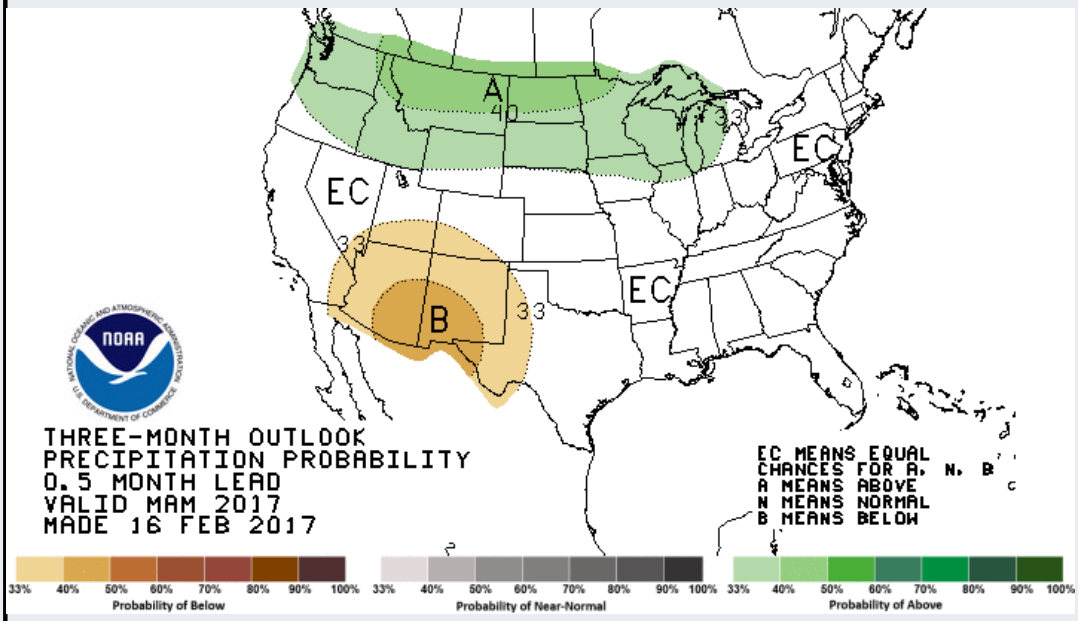
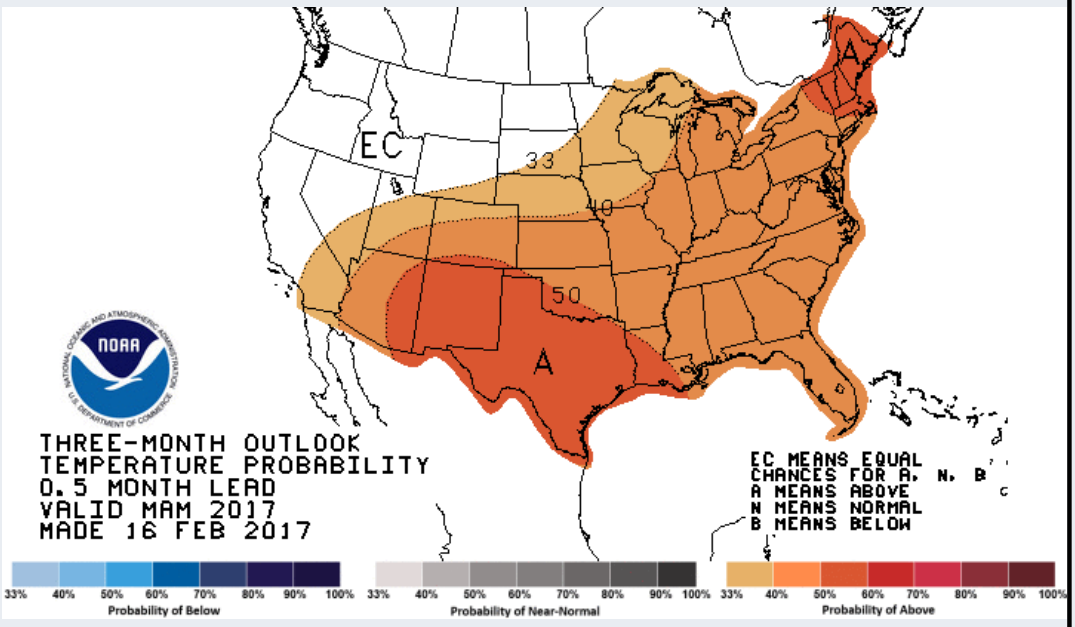
Climate Corner (continued)





Three Month Summary

Our area has a greater than 40% chance of seeing above average temperatures and equal chances of seeing above or below average precipitation.

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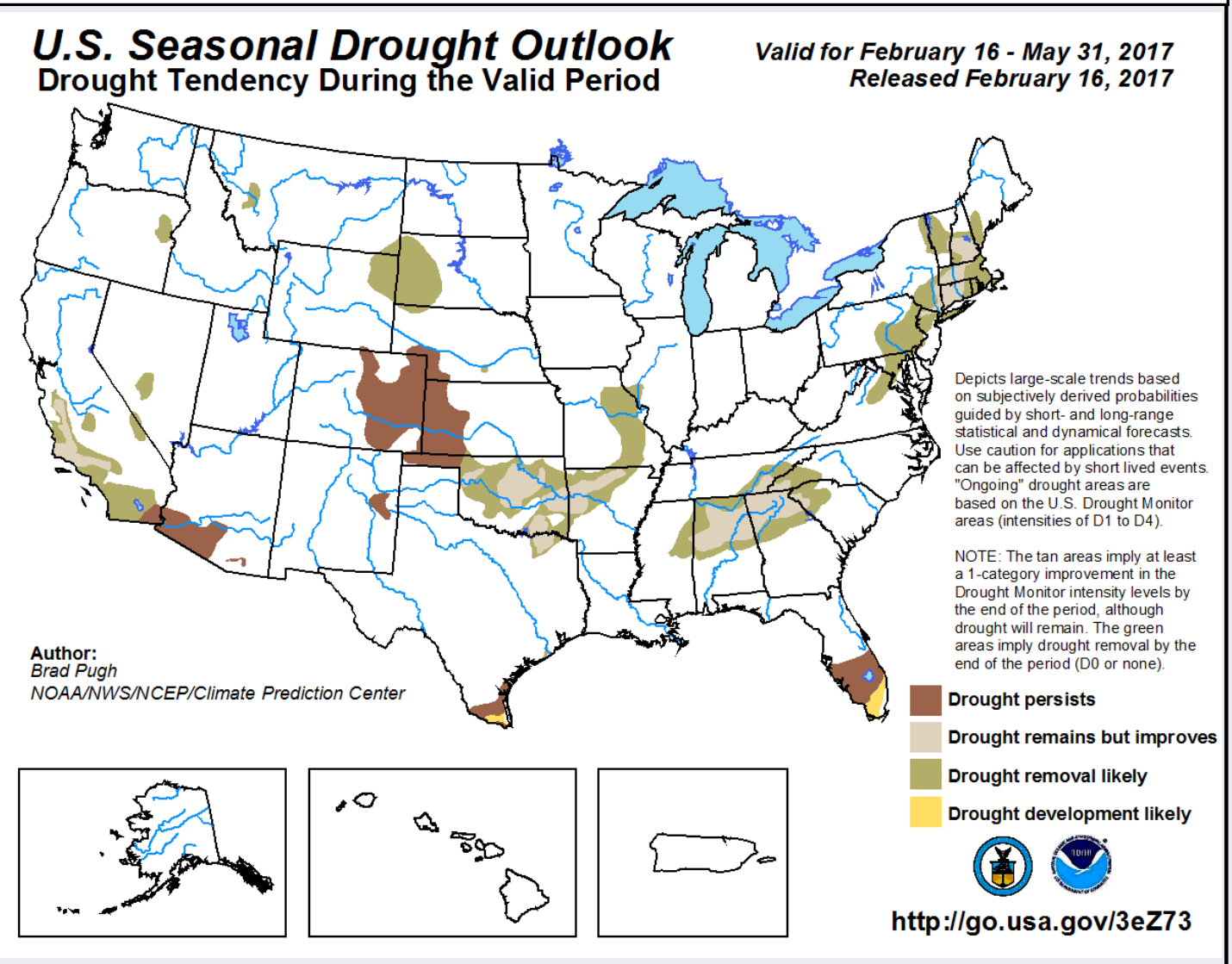

City**	Precip to Date (in.)	Average Precip to Date (in.)	Departure From Ave. (in.)
Goodland	0.93	0.87	+0.06
Burlington	0.56	0.80	-0.24
McCook	0.70	1.13	-0.43
Hill City	1.07	0.97	+0.10

**Data Collected from 1/1/2017 through 2/28/2017

Useful Links

- Storm Prediction Center
  - www.spc.noaa.gov
- Weather Prediction Center
  - www.wpc.ncep.noaa.gov
- Climate Prediction Center
  - www.cpc.ncep.noaa.gov
- Climate Data
  - www.ncei.noaa.gov
- CoCoRaHS
  - www.cocorahs.com
- Weather Models
  - www.ncep.noaa.gov

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